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Original Research Article

Impact of elevated maternal bile acid levels on fetomaternal outcomes in intrahepatic cholestasis of pregnancy: a retrospective observational study

Jijisha Ali[1]*, Aisha Saifi[2], Janaki Gopalan[1], George Alexander[3]

[1]Department of Obstetrics and Gynecology, Mediclinic Welcare Hospital, Dubai, United Arab Emirates
[2]Mohammed Bin Rashid University of Medicine and Health Sciences, (MBRU), Dubai, United Arab Emirates
[3]Department of Gastroenterology, Mediclinic Welcare Hospital, Dubai, United Arab Emirates

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***Correspondence:**
Dr. Jijisha Ali,
E-mail: jijshaji@gmail.com

ABSTRACT

Background: Intrahepatic cholestasis of pregnancy (ICP) is a reversible liver disorder associated with elevated maternal bile acids and adverse perinatal outcomes. The degree of bile acid elevation is considered a key prognostic marker. To evaluate the impact of elevated maternal bile acid levels on maternal and neonatal outcomes and to identify bile acid thresholds associated with adverse pregnancy outcomes.
Methods: A retrospective study was conducted at Mediclinic Welcare Hospital, Dubai, from January 2023 to December 2024. Sixty pregnant women diagnosed with ICP were included after exclusion of incomplete records. Patients were categorized based on bile acid levels into gestational pruritus (<19 µmol/l), mild (19–39 µmol/l), moderate (40–99 µmol/l), and severe (≥100 µmol/l). Maternal and neonatal outcomes were analyzed.
Results: Most patients had gestational pruritus (65%) followed by mild (26.7%), moderate (6.7%), and severe ICP (1.7%). The majority were South Asian (73.3%) and multigravida (61.7%). No significant association was found between bile acid levels and maternal complications. Term delivery occurred in 83.3% of cases. Neonatal outcomes were favorable in 71.7%, with NICU admissions (26.7%) primarily due to respiratory distress rather than bile acid severity. Ursodeoxycholic acid therapy improved bile acid levels in nearly half of the cases.
Conclusions: Intrahepatic cholestasis of pregnancy was associated with favourable maternal and neonatal outcomes in this cohort when managed with close antenatal surveillance, bile acid monitoring, and individualized timing of delivery.

Keywords: Intrahepatic cholestasis of pregnancy, Bile acids, Ursodeoxycholic acid, Pregnancy outcomes, Perinatal outcomes, Retrospective study

INTRODUCTION

Intrahepatic cholestasis of pregnancy (ICP) is a pregnancy-specific liver disorder characterized by pruritus and elevated serum bile acid levels, typically presenting in the late second or third trimester and resolving spontaneously after delivery.[1] The pathophysiology of ICP is multifactorial, involving genetic predisposition, hormonal influences, and environmental factors, with significant geographic and ethnic variation in incidence. Reported prevalence ranges widely from 1% to 27%, reflecting differences in population characteristics and diagnostic criteria.[2]

The diagnosis of ICP is primarily clinical, supported by elevated serum bile acids in the absence of other hepatobiliary diseases. It remains a diagnosis of exclusion, requiring careful differentiation from other pregnancy-

related liver conditions such as HELLP syndrome and acute fatty liver of pregnancy. Serum bile acids are considered the most sensitive and specific biomarker for diagnosis and prognostication, with increasing levels correlating with disease severity and fetal risk.[3]

ICP has been associated with a spectrum of adverse perinatal outcomes, including spontaneous preterm labor, fetal distress, meconium-stained amniotic fluid, and intrauterine fetal demise. However, the strength of this association varies across studies. Earlier observational studies reported inconsistent findings due to variations in study design, sample size, and evolving clinical management strategies.[4] More recent evidence suggests that higher bile acid concentrations, particularly ≥100 µmol/L, are significantly associated with increased risks of spontaneous preterm birth, meconium passage, and perinatal mortality.

Despite growing evidence, there remains a lack of consensus regarding bile acid thresholds for intervention and the extent to which maternal bile acid levels independently predict adverse outcomes. Additionally, demographic factors such as ethnicity and parity may influence disease severity and outcomes but are not fully understood.[5]

Therefore, this study aims to evaluate the relationship between maternal bile acid levels and pregnancy outcomes in a diverse population, while also assessing the role of clinical interventions and demographic factors in influencing maternal and neonatal outcomes.

METHODS

Study design and setting

This retrospective observational study was conducted at the Department of Obstetrics and Gynaecology, Mediclinic Welcare Hospital, Dubai, United Arab Emirates, over a two-year period from January 2023 to December 2024. The study aimed to evaluate the association between maternal serum bile acid levels and maternal as well as neonatal outcomes among women diagnosed with intrahepatic cholestasis of pregnancy (ICP).

Patient selection

A total of 65 pregnant women diagnosed with intrahepatic cholestasis of pregnancy during the study period were identified through the hospital electronic medical records. After excluding five patients because of incomplete clinical or laboratory data, 60 women were included in the final analysis.Women of all maternal age groups and parity who delivered at Mediclinic Welcare Hospital during the study period and had documented serum bile acid measurements with complete maternal and neonatal outcome data were eligible for inclusion. Both singleton and multiple pregnancies were included.

Women with pre-existing chronic liver disease or biliary disorders unrelated to pregnancy, including viral hepatitis, cirrhosis, gallstone disease, and other chronic hepatobiliary disorders, were excluded. Patients with incomplete medical records were also excluded from the study.

Study procedure

Eligible patients were identified through the electronic medical record system using laboratory records of elevated serum bile acid levels together with obstetric diagnoses of intrahepatic cholestasis of pregnancy. Maternal demographic characteristics including age, ethnicity, parity, body mass index, obstetric history, previous history of obstetric cholestasis, gestational age at symptom onset, associated medical disorders, liver function tests, and serum bile acid concentrations were retrieved from the electronic medical records.

Patients were classified according to their highest documented serum bile acid concentration into four categories: Gestational pruritus (<19 µmol/l), Mild ICP (19–39 µmol/l), Moderate ICP (40–99 µmol/l), Severe ICP (≥100 µmol/l).

Treatment details, including administration of ursodeoxycholic acid (UDCA), serial bile acid measurements, and timing of delivery, were reviewed. Maternal outcome measures included obstetric complications, liver function abnormalities, mode of delivery, timing of delivery, and maternal clinical outcome. Neonatal outcome measures included gestational age at birth, birth weight, Apgar scores, neonatal intensive care unit admission, duration of NICU stay, respiratory distress, meconium-stained liquor, and overall neonatal outcome.All data were anonymized before analysis to ensure patient confidentiality.

Ethical approval

The study was approved by the Mediclinic Middle East Research and Ethics Committee (Reference No. MCME.CR.383.MWEL.2024) and by the Dubai Scientific Research Ethics Committee (Reference No. DSREC-04/2025_01). Because of the retrospective study design and the use of anonymized medical records, the requirement for informed consent was waived by the Institutional Review Board.

Statistical analysis

Data were analysed using Statistical Package for the Social Sciences (SPSS) version 16.0 (IBM Corp., Armonk, NY, USA). Continuous variables were expressed as mean ± standard deviation or median (range), as appropriate. Categorical variables were presented as frequencies and percentages. Associations between bile acid severity categories and categorical variables were analysed using

the Chi-square test or Fisher's exact test where appropriate. A P value <0.05 was considered statistically significant.

RESULTS

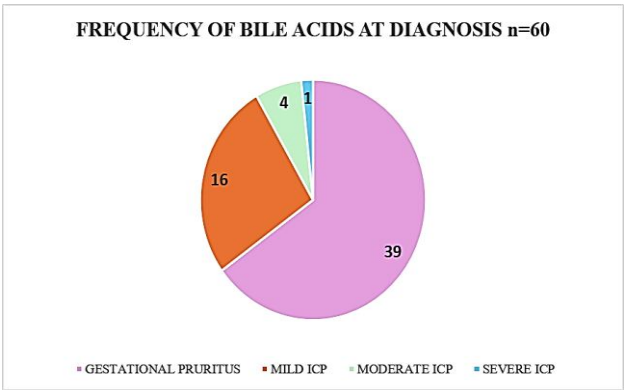
Baseline characteristics

A total of 60 pregnant women diagnosed with intrahepatic cholestasis of pregnancy (ICP) were included in the final analysis. The majority of patients had gestational pruritus 39 (65%), followed by mild 16 (26.7%), moderate 4 (6.7%), and severe ICP 1 (1.7%).

Demographic Characteristics

The majority of women were of South Asian ethnicity (73.3%). Most patients were aged between 25–39 years, with equal distribution in the 25–34 and 35–39 age groups (43.3% each). Multigravida women constituted 61.7% of the study population (Table 1).

Table 1 summarizes the baseline demographic and clinical characteristics of the study population according to bile acid severity. The majority of women were of South Asian ethnicity (73.3%), and multigravida women constituted 61.7% of the cohort. Most participants had no previous history of intrahepatic cholestasis of pregnancy (93.3%) and no associated medical comorbidities (75.0%). Gestational diabetes mellitus was the most common comorbidity (16.7%). A statistically significant association was observed between parity and bile acid severity, with multigravida women being more frequently represented in the moderate and severe bile acid groups (P = 0.029). In contrast, previous history of ICP and maternal medical comorbidities showed no significant association with bile acid severity (P=0.351).



Figures 1: Distribution of bile acid levels at diagnosis among the study population (n=60).

Table 1: Baseline demographic and clinical characteristics of the study population according to bile acid severity (n=60).

Characteristic	Gestational Pruritus (<19 µmol/L) n=39	Mild ICP (19–39 µmol/L) n=16	Moderate ICP (40–99 µmol/L) n=4	Severe ICP (≥100 µmol/L) n=1	Total (N=60)	P value
Ethnicity						
Middle Eastern	5 (12.8)	4 (25.0)	1 (25.0)	0	10 (16.7)	
North African	2 (5.1)	0	0	0	2 (3.3)	
South Asian	30 (76.9)	10 (62.5)	3 (75.0)	1 (100)	44 (73.3)	
Southeast Asian	1 (2.6)	2 (12.5)	0	0	3 (5.0)	
Western	1 (2.6)	0	0	0	1 (1.7)	
Parity						
Primigravida	20 (51.3)	3 (18.8)	0	0	23 (38.3)	0.029*
Multigravida	19 (48.7)	13 (81.3)	4 (100)	1(100)	37 (61.7)	
Previous history of ICP						
Yes	3 (7.7)	1 (6.3)	0	0	4 (6.7)	
No	36 (92.3)	15 (93.7)	4 (100)	1 (100)	56 (93.3)	
Medical comorbidity						
None	30 (76.9)	12 (75.0)	2 (50.0)	1 (100)	45 (75.0)	
GDM	6 (15.4)	3 (18.8)	1 (25.0)	0	10 (16.7)	
Essential hypertension + GDM	0	1 (6.3)	0	0	1 (1.7)	
Type 2 DM	2 (5.1)	0	0	0	2 (3.3)	0.351
Preeclampsia	1 (2.6)	0	0	0	1 (1.7)	
Systemic lupus erythematosus	0	0	1 (25.0)	0	1 (1.7)	

*Data are presented as n (%). ICP: Intrahepatic cholestasis of pregnancy; GDM: gestational diabetes mellitus; DM: diabetes mellitus.

Table 2: Clinical characteristics according to bile acid severity among women with intrahepatic cholestasis of pregnancy (n=60)

Characteristic	Gestational Pruritus (<19 µmol/L) n=39	Mild ICP (19–39 µmol/L) n=16	Moderate ICP (40–99 µmol/L) n=4	Severe ICP (≥100 µmol/L) n=1	Total (n=60)	P value
Timing of symptom onset						
Early trimester	5 (12.8)	3 (18.8)	0	0	8 (13.3)	0.650
Mid trimester	5 (12.8)	4 (25.0)	0	0	9 (15.0)	
Late trimester	29 (74.4)	9 (56.2)	4 (100)	1 (100)	43 (71.7)	
Liver function tests						
Normal	25 (64.1)	8 (50.0)	0	1 (100)	34 (56.7)	0.080
Deranged	13 (33.3)	7 (43.8)	3 (75.0)	0	23 (38.3)	
Not performed	1 (2.6)	1 (6.2)	1 (25.0)	0	3 (5.0)	
Response to UDCA therapy						
Improved	16 (41.0)	10 (62.5)	2 (50.0)	0	28 (46.7)	0.562
Unchanged	12 (30.8)	3 (18.8)	1 (25.0)	0	16 (26.7)	
Progressed	2 (5.1)	1 (6.2)	0	0	3 (5.0)	
Regressed to lower category	0	0	1 (25.0)	1 (100)	2 (3.3)	
Lost to follow-up / Repeat bile acids not available	9 (23.1)	2 (12.5)	0	0	11 (18.3)	

*Data are presented as n (%). UDCA: Ursodeoxycholic acid; ICP: Intrahepatic cholestasis of pregnancy.

Table 2 summarizes the clinical characteristics of the study population according to bile acid severity. Most women developed symptoms during the late trimester (71.7%), irrespective of bile acid severity. Liver function tests were normal in 56.7% of patients, while 38.3% had deranged liver enzymes, with no statistically significant association between liver function abnormalities and bile acid severity (P = 0.080). Following treatment with ursodeoxycholic acid (UDCA), 46.7% of patients demonstrated improvement in bile acid levels, whereas disease progression was uncommon, indicating biochemical stabilization or improvement in the majority of cases.

Table 3: Maternal and obstetric outcomes according to bile acid severity among women with intrahepatic cholestasis of pregnancy (n=60).

Outcome	Gestational Pruritus (<19 µmol/l) n=39	Mild ICP (19–39 µmol/l) n=16	Moderate ICP (40–99 µmol/l) n=4	Severe ICP (≥100 µmol/l) n=1	Total (n=60)	P value
Obstetric complications						
None	38 (97.4)	14 (87.5)	3 (75.0)	1 (100)	56 (93.3)	
Preeclampsia	1 (2.6)	0	0	0	1 (1.7)	
HELLP syndrome	0	1 (6.3)	0	0	1 (1.7)	
Suspected HELLP syndrome	0	1 (6.3)	0	0	1 (1.7)	
Meconium-stained liquor	0	0	0	0	1 (1.7)	
Maternal outcome						
Good maternal outcome	39 (100)	16 (100)	4 (100)	1 (100)	60 (100)	0.052
Mode of onset of labour						
Spontaneous labour	10 (25.6)	7 (43.8)	2 (50.0)	1 (100)	20 (33.3)	
Elective LSCS	8 (20.5)	4 (25.0)	0	0	12 (20.0)	
Emergency LSCS	7 (17.9)	1 (6.3)	1 (25.0)	0	9 (15.0)	

Continued.

Outcome	Gestational Pruritus (<19 µmol/l) n=39	Mild ICP (19–39 µmol/l) n=16	Moderate ICP (40–99 µmol/l) n=4	Severe ICP (≥100 µmol/l) n=1	Total (n=60)	P value
IOL due to ICP	14 (35.9)	4 (25.0)	1 (25.0)	0	19 (31.7)	
Final mode of delivery						
NVD	10 (25.6)	8 (50.0)	2 (50.0)	1 (100)	21 (35.0)	0.226
Elective LSCS	8 (20.5)	4 (25.0)	0	0	12 (20.0)	
Emergency LSCS	8 (20.5)	4 (25.0)	2 (50.0)	0	27 (45.0)	

*Data are presented as n (%). ICP: Intrahepatic cholestasis of pregnancy; HELLP: Hemolysis, Elevated Liver enzymes, and Low Platelet count; LSCS: Lower segment caesarean section; IOL: Induction of labour; NVD: Normal vaginal delivery

Table 3 summarizes the maternal and obstetric outcomes according to bile acid severity. Obstetric complications were uncommon, with 93.3% of women experiencing no maternal complications, and all patients had favourable maternal outcomes. Regarding the onset of labour, 33.3% presented in spontaneous labour, 31.7% underwent induction of labour for ICP, 20.0% underwent elective caesarean section without labour, and 15.0% underwent emergency caesarean section before labour. The final mode of delivery comprised 35.0% normal vaginal deliveries, 20.0% elective caesarean sections, and 45.0% emergency caesarean sections, with no significant association between bile acid severity and mode of delivery (P = 0.226).

Table 4: Neonatal outcomes according to bile acid severity among women with intrahepatic cholestasis of pregnancy (n=60).

Outcome	Gestational Pruritus (<19 µmol/l) n=39	Mild ICP (19–39 µmol/l) n=16	Moderate ICP (40–99 µmol/l) n=4	Severe ICP (≥100 µmol/L) n=1	Total (n=60)	P value
Gestational age at delivery						
Full term	35 (89.7)	12 (75.0)	2 (50.0)	1 (100)	50 (83.3)	0.073
Late preterm	4 (10.3)	2 (12.5)	2 (50.0)	0	8 (13.3)	
Very preterm	0	2 (12.5)	0	0	2 (3.3)	
Diagnosis-to-delivery interval						
<1 week	3 (7.7)	1 (6.3)	1 (25.0)	0	5 (8.3)	0.377
1–3 weeks	21 (53.8)	7 (43.8)	2 (50.0)	0	30 (50.0)	
4–6 weeks	5 (12.8)	5 (31.3)	1 (25.0)	1 (100)	12 (20.0)	
>6 weeks	10 (25.6)	3 (18.8)	0	0	13 (21.7)	
Neonatal outcome						
Good outcome	28 (71.8)	11 (68.8)	3 (75.0)	1 (100)	43 (71.7)	0.810
Respiratory distress	10 (25.6)	4 (25.0)	1 (25.0)	0	15 (25.0)	
Low birth weight	1 (2.6)	0	0	0	1 (1.7)	
Blood sugar monitoring	0	1 (6.3)	0	0	1 (1.7)	
NICU stay						
No NICU stay	26 (66.7)	10 (62.5)	2 (50.0)	1 (100)	39 (65.0)	0.371
Mild stay	7 (17.9)	2 (12.5)	0	0	9 (15.0)	
Moderate stay	5 (12.8)	1 (6.3)	1 (25.0)	0	7 (11.7)	
Prolonged stay	1 (2.6)	3 (18.8)	1 (25.0)	0	5 (8.3)	

*Data are presented as n (%). ICP: Intrahepatic cholestasis of pregnancy; NICU: Neonatal intensive care unit

Table 4 summarizes the neonatal outcomes according to bile acid severity. Overall, 83.3% of pregnancies resulted in full-term delivery, while 13.3% were late preterm and 3.3% were very preterm. Half of the women delivered within 1–3 weeks of diagnosis (50.0%), and no significant association was observed between bile acid severity and the diagnosis-to-delivery interval (P=0.377). Overall, 71.7% of neonates had favourable outcomes. NICU admissions were predominantly due to respiratory distress (25.0%), whereas admissions for low birth weight and blood glucose monitoring were uncommon (1.7% each). Most neonates (65.0%) did not require NICU admission,

and there was no statistically significant association between bile acid severity and gestational age at delivery (P=0.073), neonatal outcome (P=0.810), or duration of NICU stay (P=0.371).

Overall results summary

The majority of women had gestational pruritus or mild intrahepatic cholestasis of pregnancy, with severe disease being uncommon. No statistically significant association was observed between bile acid severity and maternal outcomes, mode of delivery, or the interval between diagnosis and delivery. Maternal outcomes were uniformly favourable, with no maternal intensive care unit admissions or severe maternal morbidity. Most pregnancies resulted in term deliveries, with relatively low rates of preterm birth. Neonatal outcomes were predominantly favourable, and neonatal intensive care unit admissions were mainly related to respiratory distress rather than increasing bile acid severity. Treatment with ursodeoxycholic acid (UDCA) was associated with improvement or stabilization of bile acid levels in most patients. Overall, increasing bile acid severity did not demonstrate a consistent association with adverse maternal or neonatal outcomes in this cohort, suggesting that close antenatal surveillance, timely medical management, and individualized obstetric care may have contributed to the favourable pregnancy outcomes observed.

DISCUSSION

The present retrospective observational study evaluated the relationship between maternal serum bile acid levels and pregnancy outcomes among women diagnosed with intrahepatic cholestasis of pregnancy (ICP) in a tertiary care hospital in Dubai. The principal findings were that most women had gestational pruritus or mild ICP, maternal and neonatal outcomes were generally favorable, and increasing bile acid severity was not significantly associated with adverse maternal or neonatal outcomes in this cohort. These findings suggest that careful antenatal surveillance, serial biochemical monitoring, timely initiation of ursodeoxycholic acid (UDCA), and individualized timing of delivery may have contributed to the favorable clinical outcomes observed.

The majority of women in our study had gestational pruritus (65%) or mild ICP (26.7%), whereas moderate and severe disease accounted for only a small proportion of cases. This distribution is consistent with previous observational studies reporting that mild disease constitutes the largest proportion of ICP cases and that severe disease remains relatively uncommon.[6] Our findings therefore reflect the disease spectrum encountered in routine clinical practice rather than a highly selected referral population. Furthermore, the low proportion of severe ICP in our cohort may partly explain the absence of stillbirth and other severe neonatal complications.

Most patients presented during the late second or third trimester, which is consistent with the recognized natural history of ICP.[1,7] Hormonal changes, increasing placental steroid production, and genetic susceptibility during advancing gestation are believed to contribute to disease onset. We also observed that women of South Asian ethnicity constituted nearly three-quarters of the study population. Although this may partly reflect the demographic characteristics of the hospital catchment area, previous studies have similarly demonstrated ethnic and geographical variation in the incidence of ICP.[2,8] In addition, multigravidity was significantly associated with increasing bile acid severity in our study. This observation may indicate cumulative susceptibility in subsequent pregnancies, although larger prospective studies are required to determine whether parity independently influences disease severity.

Another important finding was the absence of a statistically significant association between bile acid severity and maternal comorbidities, liver function abnormalities, or maternal complications. Although gestational diabetes mellitus was the most frequently observed medical disorder, its distribution did not differ significantly across bile acid severity groups. These findings differ from some published reports suggesting an increased prevalence of metabolic disorders and hypertensive diseases among women with ICP.[9] One possible explanation is the relatively small number of women with moderate and severe disease in our cohort, which may have reduced the ability to detect such associations. Alternatively, differences in ethnicity, referral patterns, diagnostic criteria, and clinical management between populations may also contribute to these variations.

UDCA remains the most widely used first-line pharmacological treatment for ICP because of its favorable safety profile and beneficial effects on maternal pruritus and biochemical markers.[10] In the present study, most women who received UDCA demonstrated improvement or stabilization of serum bile acid concentrations, while only a few progressed to more severe disease. Although our retrospective design does not allow causal conclusions regarding treatment efficacy, these findings support the routine clinical use of UDCA as part of comprehensive ICP management. It is important to acknowledge that current evidence indicates that while UDCA consistently improves maternal symptoms and liver biochemistry, its effect on reducing adverse perinatal outcomes remains uncertain. Therefore, the favorable neonatal outcomes observed in our study are likely attributable to the combined effects of medical therapy, close fetal surveillance, and appropriate obstetric management rather than pharmacological treatment alone.

Maternal outcomes were uniformly favorable in our cohort, with no maternal intensive care admissions, severe hepatic dysfunction, or maternal mortality. Likewise, most pregnancies resulted in term delivery, and induction of

labour was primarily undertaken as a planned strategy to reduce fetal risk rather than because of maternal deterioration. These observations are clinically important because they suggest that proactive management may reduce maternal morbidity without increasing unnecessary obstetric intervention. Our findings differ from larger observational studies that have reported higher rates of preterm birth and caesarean delivery among women with ICP.[11] However, the differences are likely related to variations in disease severity, sample size, and institutional protocols regarding timing of delivery.

Neonatal outcomes were also reassuring. Approximately three-quarters of neonates had favorable outcomes, while neonatal intensive care unit admissions were mainly related to respiratory distress rather than increasing bile acid severity. Importantly, no stillbirths or neonatal deaths occurred during the study period. These findings contrast with large meta-analyses demonstrating an increased risk of stillbirth, meconium-stained liquor, and spontaneous preterm birth among women with markedly elevated bile acid concentrations.[12] The discrepancy is likely explained by the very low number of women with severe ICP in our study and by the implementation of intensive fetal surveillance with individualized delivery planning.

Our findings are consistent with those reported by Naga and Joseph, who observed predominantly favorable maternal and neonatal outcomes in women with ICP managed in a tertiary care setting.[13] Similarly, Granese et al. demonstrated that although severe ICP is associated with an increased risk of adverse perinatal outcomes, appropriate surveillance and timely obstetric intervention substantially improve pregnancy outcomes.[14] More recently, Majewska et al. reported that the timing and persistence of severe bile acid elevation, rather than the presence of severe disease alone, may be critical determinants of stillbirth risk.[15] This concept provides a plausible explanation for the absence of stillbirths in our cohort, in which only one patient had bile acid concentrations ≥100 µmol/l and underwent close monitoring with timely delivery.

Taken together, our findings suggest that serum bile acid concentration remains an important biochemical marker for risk stratification in ICP; however, bile acid levels should not be interpreted in isolation. Clinical decision-making should integrate maternal symptoms, fetal surveillance findings, gestational age, response to treatment, and serial biochemical assessment. In our cohort, this individualized management strategy was associated with excellent maternal outcomes and favorable neonatal survival despite the presence of ICP. These observations support current recommendations advocating regular bile acid monitoring and individualized timing of delivery rather than relying solely on a single bile acid measurement.

Future multicentre prospective studies with larger numbers of women with moderate and severe intrahepatic cholestasis of pregnancy are required to further clarify the relationship between bile acid severity and adverse maternal and neonatal outcomes.

Strengths

Provides real-world data from a tertiary care center in the Middle East. Comprehensive evaluation of maternal, obstetric, and neonatal outcomes. Inclusion of bile acid–based severity stratification, aligning with current guidelines. Demonstrates treatment response (UDCA) and its clinical implications. Absence of missing major outcomes strengthens internal validity.

Limitations

The Small sample size (n = 60), particularly very few moderate and severe cases, limiting subgroup analysis. Single-center retrospective design, which may affect generalizability. Lack of long-term neonatal follow-up data. Limited ability to assess dose-response relationship of bile acids, especially at higher thresholds. Potential selection bias due to exclusion of incomplete records.

CONCLUSION

Intrahepatic cholestasis of pregnancy in this cohort was predominantly mild and presented in the late third trimester. Multigravidity and South Asian ethnicity were notable associations, while comorbidities did not significantly influence disease severity. UDCA therapy was effective in improving or stabilizing bile acid levels in most patients.

Despite the known association of ICP with adverse perinatal outcomes, our study demonstrated predominantly favorable maternal and neonatal outcomes, with high rates of term delivery, minimal preterm births, and no stillbirths or neonatal mortality. These findings highlight the importance of early diagnosis, regular bile acid monitoring, and individualized timing of delivery in optimizing outcomes.

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